

FLORA
OF THE PRAIRIE PROVINCES
Bernard Boivin

Part IV -- MONOPSIDA

Class 7. MONOPSIDA MONOPSIDS, MONOCOTS

Always herbs, always devoid of a taproot, without bark. Leaves nearly always simple, sessile, and entire with parallel nervation. Flowers mostly trimerous, but often much reduced.

The more obvious difference between the Dicopsids and Monopsids is in the basic leaf type. The normal leaf is made up of a blade and petiole; it is present in nearly all Dicopsids. The Monopsid leaf appears to have lost its blade and is reduced to a petiole. When this Monopsid petiole is flattened out into a blade, as frequently happens, it may take on the general appearance of a Dicopsid leaf, yet the nervation is still recognizably that of a petiole with its parallel and non branching nerves. The two types of leaves may be compared as follows.

Dicopsida. A typical leaf comprises 3 readily identifiable elements: a dilated blade, an elongated petiole, and a pair of stipules. The stipules are very variable in size, colour and shape; often they are absent; commonly they are borne at the base of the blade and have the aspect of a pair of small leaflets. The petiole is a thin elongated structure supporting a blade and it is prolonged into the blade in the form of a simple or branching midnerve. The blade is the flat and green terminal part of the structure. The central or main nerve of the leaf is termed the midnerve and the other nerves arise as branches of it. The branches arising directly from the midnerve are termed primary nerves, these in turn may also produce lesser branches which are termed secondary nerves. Commonly the midnerve and primary nerves will end in the marginal teeth or they may turn \pm halfway around and connect with one another or they may merely fade out towards the margin. The midnerve may give rise to the primary nerves successively, in the manner of the barbs of a feather (i.e. pinnately). Or the midnerve may branch off at the base of the blade and produce a group of primary nerves diverging in the manner of the fingers of a spreadout hand (i.e. palmately). Less commonly two (sometimes more) of the primary nerves will arise from near the base of the blade and will be almost as long and almost as strong as the midnerve; often such a leaf will be described as parallel-nerved if the stronger primary nerves run somewhat halfway between the midnerve

and the margin, but this terminology is clearly an exaggeration although a convenient one. Dicopsids present numerous variations on their basic leaf pattern and some of them may resemble a Monopsid leaf: the leaf may be very narrow and its nervation may be reduced to the midnerve (e.g. Hippuris, Callitriche), or the nervation may be in the form of divergent rather than branching primary nerves (e.g. Plantago).

Monopsida. The leaf may be reduced to a filiform and elongated petiole with a single midnerve, as exemplified by the submersed leaves of many species of Potamogeton, but usually the petiole is broadened into a limb. The stipules are nearly always present and may be free or variously modified, but commonly they are very much elongated and fused to the edge or to the ventral face of the petiole; they are then distinguishable mainly as membranous marginal expansions which will often enclose the stem into a structure termed sheath. The tip of the stipules may remain free and form structures called auricles or a ligule. Commonly the petiole will not be readily recognized as such, but will be flattened out into a green expanse similar to the leaf of the Dicopsids and similarly called a leaf despite its petiolar origin. The usual type of leaf as seen in the Grasses and Sedges, is a sessile and much elongated or ribbon-like structure with a few truly parallel nerves running the whole length of the limb. The central nerve is usually a bit stronger than the others and is termed the midnerve. The primary nerves do not branch off the midnerve, but are already distinct at the very base of the limb; they may converge at the tip of the limb without actually joining. Secondary nerves are sometimes sent in the form of finer nerves crossing the intervals between the primary nerves. All nerves are simple or they may be joined by fine interconnections. Broader leaves also occur (e.g. many Liliaceae); they still fit the description above except that their primary nerves are somewhat curved and not truly parallel, although they are still said to be parallel as a matter of convenience. More rarely (e.g.: Smilax or the floating leaves of Potamogeton) the petiole will remain narrow and petiole-like in the lower part, but will be dilated into a blade in the upper part. Only very exceptionally will a Monopsid leaf be atypical (e.g. Trilium, Arisaema) to be point of similarity to a Dicopsid leaf.

Two keys are provided for the Monopsids. The first is a natural key based primarily on floral characteristics.

A second and purely artificial key will be found at the end of the Monopsids.

- a. Ovary of free and many-seeded carpels, or more commonly the carpels fused into a compound ovary, sometimes reduced to a single achene Folliculidae
- aa. Carpels free and reduced to one-seeded achenes, sometimes reduced to a single carpel Achenidae p.

Sub-class 3.

FOLLICULIDAE

Ovary of 3-6 carpels and compound, or the carpels free and many-seeded, maturing into a capsule, a group of follicles or a berry, etc., sometimes an achene-like fruit reduced from a compound ovary.

- a. Perianth much reduced or absent.
 - b. No spathe.
 - c. Stem solid; each floret with only one bract or the bracts not opposite 71. Cyperales, p. 808
 - cc. Stem hollow; each floret subtended by a pair of opposite bracts 72. Graminales, p. 879
- bb. Spathe present, subtending the inflorescence.
 - d. Fruit a berry 73. Arales, p. 976
 - dd. Fruit achene 74. Typhales, p. 980
- aa. Perianth present and functional.
 - e. Ovules scattered all over the wall of the carpel 61. Butomales, p. 758
- ee. Ovules borne along the edge only.
 - f. Carpels free or nearly so.
 - g. Carpels borne around a central column 64. Juncaginales, p. 762
 - gg. No central column 62. Scheuchzeriales, p. 761
 - ff. Carpels fused into a compound ovary...Group A

Group A

Perianth present; carpels fused.

- a. Ovary superior.
 - b. Flower plainly differentiated into sepals and petals 63. Commelinales, p. 761
- bb. Petals and sepals very similar or nearly identical and usually concolour.
 - c. Perianth small and chaff-like 70. Juncales, p. 797
- cc. Perianth petaloid.
 - d. Leaves normal; roots system herbaceous or fleshy 65. Liliales, p. 763
 - dd. Leaves strongly fibrous, rigid, sharp-pointed; rhizome or stem \pm woody ... 67. Agavales, p. 782

- aa. Ovary inferior.
 e. Flower zygomorphic 69. Orchidales, p. 783
 ee. Regular.
 f. Leaves equitant 66. Iridales, p. 780
 ff. Leaves normal 68. Haemodorales, p. 783
 Sub-class 3. FOLLICULIDAE

Order 61. BUTOMALES

Ovules borne all over the inner wall of the carpel.

- a. Ovary superior 114. Butomaceae, p. 758
 aa. Inferior 115. Hydrocharitaceae, p. 759

114. BUTOMACEAE FLOWERING RUSH FAMILY

A typical Monopsid, resembling the Liliaceae, but for the placentation and the carpels free or nearly so.

1. BUTOMUS L. FLOWERING RUSH

Flowers umbellate. Petals persistent.

1. B. UMBELLATUS L. -- Flowering Rush (Jonc fleuri, Flûteau) -- Flowers purplish pink in a showy umbel on a tall scape. Leaves all basal, ensiform and triangular in cross section, nearly as tall as the scape, the latter often 1 m high or more. Early to mid summer. Cultivated and rarely escaping or introduced to shores of receding waters: Netley Creek. -- NS-PEI, Q-Man, US, Eur.

Some gardeners, nature lovers or naturalists may attempt to introduce plants into native habitats; they rarely meet with success. Indeed the failure rate might be of the order of 99%, while most successful introductions seem to be essentially unpremeditated. Attempts at introductions in the wild are relatively uncommon in our area, yet not completely absent. The local history of Butomus offers interesting insights in the matter.

In 1948 a business firm in Chatham, Ontario, sent 11,000 corms to the Manitoba Government for trial plantings. There may have been also some later shipments to a few individuals. Most, if not all, corms must have died, since the first collection of Butomus in the wild was not made until 16 years later and, after such a long interval, one may wonder if the two are events are causally related.

We have tried in this flora to distinguish between deliberate introductions in the wild and actual naturalisations; the first are ignored, the others are keyed out and described. Unfortunately label data are often inadequate to our purposes and introduce a margin of error; no doubt some of our inclusions are not fully justified, some omissions were unwarranted. Time will tell: cultivated plants almost invariably regress and wither if

they are denied the care and attention of an interested gardener, hence the lack of repeat collections over the long term for nearly all deliberate introductions.

115. HYDROCHARITACEAE FROG'S BIT FAMILY

Ovary inferior. Aquatic plants ± submerged.

- a. Leaves opposite or in whorls 1. Elodea
 aa. All basal 2. Vallisneria

1. ELODEA Richard WATERWEED

Flower arising singly from a long tubular sheath. Pistillate flower borne inside the sheath, but the perianth-tube elongating greatly and simulating a long, thin pedicel, and eventually reaching the surface of the water. Our species rarely seen in flower.

- a. Middle and upper leaves in 3's 1. E. canadensis
 aa. Opposite 2. E. longivaginata

1. E. canadensis Mx. (Anacharis canadensis (Mx.) Planchon) -- Waterweed, Ditch-Moss (Peste des eaux) -- Submerged and nearly always sterile herb with numerous small leaves verticillate in 3's. Leaves ligulate, about 1 cm long, about 2 mm wide. Late summer. Shallows in slow flowing freshwater streams, from lake La Ronge eastward. -- NS, NB-S, BC, US, Eur.

2. E. longivaginata St. John (E. canadensis AA.; E. laevivaginata sphalm.; Anacharis Nuttallii AA.) -- Quite like the first, but all the leaves opposite and commonly about 2 cm long. Leaves very finely scabrous-serrulate towards the tip. Early summer. Alkaline sloughs, rare or overlooked. --swS-sAlta, US.

Not to be confused with the habitually similar Callitriche, the latter has entire leaves, or (C. hermaphroditica) shallowly emarginate and minutely bidentate at tip.

2. VALLISNERIA L. TAPEGRASS

Leaves all in a basal rosette. Perianth tube elongating as in Elodea, only more so. Male flowers not stipitate, but released from a basal spathe to become free floating on the surface of the stream.

1. V. americana Mx. (V. spiralis AA.) Wild Celery, Elgrass (Herbe à la barbotte, Herbe aux anguilles) -- Tufted submerged herb with very long, narrow and ribbon-like leaves, very flaccid and their tip coming to float on the surface of the water. Leaves with transverse or diagonal lines of darker or purplish dots. Perianth tube becoming coiled after anthesis. Mid summer. Slow moving waters, usually less than 1 m deep. -- NS, NB-seMan, US.

When sterile likely to be confused with other ribbon-like aquatics such as Sparganium, but these lack the lines of purple dots and usually have much larger cells.

Order 62. SCHEUCHZERIALES

Carpels free or nearly so and maturing into many-seeded follicles. Similar to the Butomales, but the seeds borne along the carpel margin only.

116. SCHEUCHZERIAACEAE

SCHEUCHZERIA FAMILY

Leaves sheathing and ligulate like a Grass.

1. SCHEUCHZERIA L.

Monotypic.

1. S. palustris L. -- (Petit jonc fleuri) -- Fruit of 3 horizontally spreading follicles. Habitally much like a Juncus but the 3 carpels nearly free. Flowers small and inconspicuous, the tepals only 2-3 mm long, the plant therefore nearly always collected in fruit. Early summer. Wetter parts of bogs and rare, or perhaps merely inaccessible. --Mack-Aka, L-NF, NS, NB-BC, US.

North American specimens are reported to have a slightly longer seed and the mature capsule should have a slightly higher beak, they have been accordingly segregated as var. americana Fern. But specimens at hand failed to conform to the expected morphological pattern.

Order 63. COMMELINALES

Perianth clearly differentiated into a corolla and a green calyx. Otherwise similar to the Liliaceae.

117. COMMELINACEAE

SPIDERWORT FAMILY

Ovary 2-3 locular. Leaves sheathing at base.

1. TRADESCANTIA L.

SPIDERWORT

Corolla regular. Flowers in cymes.

1. T. occidentalis (Britton) Smyth -- Showy flower with 3 large blue petals and much smaller green sepals, the petals deliquescent and often leaving nothing but a blue smear on the herbarium sheet. Leaves broadly sheathing at base, the limb very long and very narrow, falcate to somewhat coiled at tip. Glandular-pilose in the inflorescence; herbage otherwise glabrous. First half of summer. Light sands; local: Melita, Routledge. -- swMan, US, (CA).

Order 64. JUNCAGINALES

Flowers bractless as in the Achenidae, but the perianth normal, trimerous.

116. JUNCAGINACEAE ARROWGRASS FAMILY

Single family.

1. TRIGLOCHIN L. ARROWGRASS

Fruit a group of carpels attached to a central column.

- a. Tepals broadly rounded at summit; fruit oblong ..
..... 1. T. maritimum
- aa. Sepals acuminate; fruit narrowly oblanceolate ...
..... 2. T. palustre

1. T. maritimum L. -- (Herbe soelting, Faux Jonc)
 -- Inflorescence a bractless raceme. Otherwise habitually similar to an Onion. Leaves all basal, narrow and elongate, sheathing at base. Carpels and styles 6. Fruit 3-5 mm long. Early summer. Frequent in marshes and sloughs -- seK-Aka, L-SPM, NS-BC, US, (CA, SA), Eur, (Afr).

2. T. palustre L. -- (Faux Jonc) -- Closely similar but smaller and with much finer foliage. Carpels and styles 3. Fruit 6-9 mm long. First half of summer. Bogs, shores and sloughs. --G, K-Aka, L-SPM, NS-BC, US, (SA), Eur.

Order 65. LILIALES

The typical family of Monopsids with flowers regular, the floral parts in 3's and all free, except the carpels.

119. LILIACEAE LILY FAMILY

Ovary superior.

- a. Climbing by tendrils 21. Smilax
- aa. Non-climber.
 - b. At least the upper leaves opposite or verticillate Group A
 - bb. Alternate or all basal.
 - c. Leaves all or mainly basal Group B
 - cc. Stem leafy.
 - d. Inflorescence terminal Group C
 - dd. Flowers axillary Group D

Group A

At least some of the leaves opposite or verticillate.

- a. Leaves numerous, the upper verticillate, the middle and lower ones alternate 8. Lilium
- aa. Leaves (2)-3-(4).
 - b. Leaves broadly ovate 20. Trillium
 - bb. Lanceolate to long linear.

- c. Leaves isomegueth, borne near the middle of the stem 9. Fritillaria
 cc. Dimegueth, the basal one many times longer than the two opposite upper leaves 11. Calochortus

Group B

Leaves all or mainly basal.

- a. Flower solitary or in an umbel.
 b. Flowers very numerous 7. Allium
 bb. Only 1-6 flowers; leaves large.
 c. Glabrous 10. Erythronium
 cc. Leaves ciliate or villous 14. Clintonia
 aa. Flowers in a raceme or panicle.
 d. Flowers small, sessile 1. Tofieldia
 dd. Much larger and on long peduncles.
 e. Leaves strongly scabrous above.....
 2. Xerophyllum
 ee. Smooth.
 f. Flowers blue; bracts longer than the peduncles 12. Camassia
 ff. Flowers white or yellow to purplish; bracts mostly shorter.
 g. Flowers 1-4 10. Erythronium
 gg. Much more numerous.
 h. Flower tubular; leaves enlarging to 2-3 cm in fruit..
 3. Stenanthium
 hh. Tepals spreading; leaves less than 1 cm wide
 4. Zygadenus

Group C

Leaves alternate; inflorescence terminal.

- a. One-flowered.
 b. Flower or fruit longer than its peduncle ..
 6. Uvularia
 bb. Peduncle many times longer 9. Fritillaria
 aa. Flowers numerous.
 c. Leaves very narrow, ensiform, strongly scabrous above 2. Xerophyllum
 cc. Broader, ovate to lanceolate.
 d. Leaves cordate at base, the lower short petiolate 16. Maianthemum
 dd. Cuneate to broadly rounded at base and sessile to clasping.
 e. Flowers 1-3 at the end of each branch ..
 17. Disporum
 ee. Flowers in a single terminal raceme or panicle.

- f. Flowers greenish; herbage soft
pubescent throughout..... 5. Veratrum
ff. Flowers whitish; herbage gla-
brous or nearly so 15. Smilacina

Group D

Stem leafy; flowers axillary.

- a. Leaves filiform, borne in clusters 13. Asparagus
aa. Leaves alternate and much larger.
b. Flowers in 2's 19. Polygonatum
bb. Solitary.
c. Single-flowered plant 6. Uvularia
cc. Flowers many 18. Streptopus

1. TOFIELDIA Hudson FALSE ASPHODEL

Leaves equitant, that is folded longitudinally with the two halves of the upper face fused together, thus only the lower face is visible and the leaf appears to be inserted edgewise to the base of the stem. Leaves distichous. Flowers in a spiciform raceme.

- a. Stem densely glandular 2. T. glutinosa
aa. Glabrous.
b. Stem green, leafless 1. T. pusilla
bb. Reddish purple and bearing a small leaf
halfway up 3. T. coccinea

1. T. pusilla (Mx.) Pers. (T. palustris AA.) -- Scotch Asphodel -- Small scapose herb with a flabelliform rosette of equitant leaves. Glabrous, the stem 1-2 dm high. Inflorescence short and fairly dense, the flowers mostly only 5-7, nearly sessile and verticillate. About the middle of summer. Along subarctic and mountain creeks. -- G-Aka, L-NF, Q-nwS-BC, (US, Eur).

A report by Lowe 1943 of T. palustris from McCreary along the eastern edge of the Riding Mountain was repeated by Hultén 1962. But it was ignored by Scoggan and probably rightly so as the locality has never been confirmed and seems rather unlikely for a subarctic species.

2. T. glutinosa (Mx.) Pers. var. glutinosa -- Stem copiously dotted in red with sessile glands. A larger plant, 2-4 dm, with the longer basal leaves 1-2 dm long. Flowers, etc. larger. Pubescence dimorphic, the rachis and pedicells glandular-puberulent in yellow. Seed brown, the seed-coat tight. Early summer. Bogs and open, wet places. --K-Aka, (L)-NF-SPM, NS, NB-BC, US -- Var. intermedia (Rydb.) Boivin (ssp. brevistyla (Rydb.) C.L. Hitchc.) -- Seeds straw-coloured with the paler outer seed-coat loose and the brown seed free inside. Pu-

bescence as above. -- seAka, swAlta-BC, US -- Var. montana (C.L. Hitchc.) R.J. Davis -- Stem glandular-puberulent in the manner of the inflorescence. Seed type intermediate, brown with a partly loose seed-coat. Waterton--swAlta, wUS.

The type (NY) of T. intermedia Rydb. comes from southeastern Alaska an area where two varieties occur; as it is in flower it cannot be identified positively as to variety. However traditional usage, as pointed out by Hitchcock 1944, has more or less restricted this name to the pale-coloured seed type and we have felt justified to continue in the same vein as the name is not otherwise ambiguous.

3. T. coccinea Rich. var. coccinea -- Small and glandless like T. pusilla, but the stem deep purple and bearing 1-(2) leaves. Stem rarely over 1 dm high. Flowers becoming pedicellate, at least the lower ones alternate. Early summer. High alpine, usually in limestone areas. -- G-Aka, (Q, Alta)-BC, (Eur).

A number of other varieties (not studied) have been reported from Eastern Asia.

2. XEROPHYLLUM Mx.

BEAR GRASS

Herbs with a woody rhizome and the general habit of a Yucca or Agave. Flowers unspecialized and typical of the family. Styles 3, free.

1. X. tenax (Pursh) Nutt. -- Bear-Grass -- Showy raceme of very numerous white flowers on a tall stem arising from the center of a dense clump of very long leaves. Leaves very rough, the basal ones 2-7 dm long, stiff and very narrow. Raceme large and dense. First half of summer. Locally abundant in open montane woods: Waterton. --swAlta-seBC, US.

3. STENANTHIUM Kunth

Closely similar to the next, but the glandless tepals adnate to the base of the ovary, the fruit therefore somewhat semi-inferior. Otherwise a typical Liliaceous plant.

1. S. occidentale Gray -- Mountain-Bells, Bronze Bells -- Flowers tubular and drooping in a more or less secund raceme. Rosette leaves linear-lanceolate, the stem leaves few and much smaller. Inflorescence sometimes slightly branched towards the base. Flowers mostly purplish green. Fruit erect. First half of summer. Moist, open montane woods. --swAlta-BC, US, (Eur).

4. ZYGADENUS Mx.

CAMASS

Tepals with 1-2 glandular spots towards the base. Ovary superior to semi-inferior. Flower otherwise typical of the family.

Z. paniculatus (Nutt.) Watson has been reported repeatedly from Western Canada. An earlier report by Watson for Saskatchewan is repeated by Macoun 1888. Henry 1915 includes Alberta in its range and Eastham 1947 quotes some B.C. locations. None of these reports were ever confirmed and only one was eventually traced (and doubtfully at that) to an herbarium specimen (CAN, DAO). The latter has been revised to Z. venenosus and a similar disposition is presumably the correct one for the other reports.

- a. Tepals 8-12 mm long 1. Z. elegans
 aa. Tepals smaller, 4-7 mm long; inflorescence
 always a raceme 2. Z. venenosus

1. Z. elegans Pursh (Z. chloranthus Rich.; Anticlea elegans Rich.) -- White Camass, Alkali-Grass -- Ovary soon becoming semi-inferior. Onion-like in habit and arising from an onion. Stem leaves few and much reduced. Inflorescence a raceme or more commonly a panicle. Flowers yellow and greenish with large, darker, glandular patches towards the base. First half of summer. Common in prairies. --Mack-Aka, NB-BC, US.

2. Z. venenosus Watson (var. gramineus (Rydb.) Walsh; Toxiscordion gramineum Rydb.) -- Poison-Camass, Hog's Potato -- Tepals unguiculate, yellowish-white. Flowers smaller in a denser and simple raceme. Ovary and capsule superior. Late spring and early summer. Frequent in low spots in prairies and steppes. -- sS-BC, US.

5. VERATRUM L.

FALSE HELLEBORE

Seeds winged, borne in a capsule. Styles 3 and free, the flowers otherwise typical of the family.

1. V. Eschscholtzii Gray var. Eschscholtzii -- A rather coarse herb with broad, ovate leaves 1-2 mm wide and short-sheating at base. Perennial 1-2 m high, the herbage puberulent to somewhat arachnoid. Inflorescence a narrow raceme of secund and recurved racemes. Tepals 8-11 mm long. Mid summer. Light and wet or marshy woods. --wMack-Aka, Alta-BC, (US) -- var. incrinitatum Boivin -- Smaller, only 1 m high or less. Leaves narrower, only 5-8 cm wide. Tepals shorter, 5-8 mm long. Branches spreading rather than recurved. Low alpine -- swAlta-BC.

6. UVULARIA L.

BELLWORT

Only 1 style, but trifid. Single-flowered herbs with alternate leaves and unusual branching arrangements.

1. U. sessilifolia L. (Oakesia sessilifolia (L.) Watson) -- Wild Oats -- At first simple and circinate with a single terminal flower, soon producing a single branch while the fertile one elongates and the single flower or fruit becomes borne opposite the lowermost leaf of the fertile branch. Fruit fairly-large, pedunculate and abruptly contracted into an obvious stipe. Late spring. Local in deciduous woods: Roseisle, Sandilands. -- NS, NB-sMan, US.

7. ALLIUM L.

ONION

The Onion proper, that is an herb arising from a bulb of tubular sheaths, with a rosette of elongate leaves, a stem scapose or leafy towards the base only, and a terminal umbel of flowers. Flowers typical for the family.

- a. Leaves 1-7 cm wide, absent at flowering time...
..... 6. A. tricoccum
- aa. Leaves narrower and present throughout the season.
 - b. Most flowers changed to bulblets; stem leafy below the middle 1. A. sativum
 - bb. Flowers normally present and bulblets absent.
 - c. Leaves terete; perianth 10-12 mm high..
.....5. A. Schoenoprasum
 - cc. Leaves flat; tepals 8 mm long or less.
 - d. Outer bulb sheaths disintegrating to a fibrous reticulum; stamens included 4. A. Geyeri
 - dd. Outer sheaths remaining membranous; stamens more or less exerted.
 - e. Umbels usually nodding; sepals obtuse or rounded at summit ..
..... 2. A. cernuum
 - ee. Umbels typically erect; sepals short mucronate 3. A. stellatum

1. A. SATIVUM L. -- Garlic (Ail) -- Umbell mostly of bulblets. Leaves flat, 5-10 mm wide, clothing the stem in the lower half. Umbel subtended by, and half enclosed into, a large bract prolonged into a beak up to 1 dm long. Early summer. Cultivated and rarely spreading to fencerows, wasteland or dumps: Otterburne. -- swO-seMan, (US, Eur).

2. A. cernuum Roth -- Wild Onion -- Inflorescence nodding, the scape being strongly recurved just below the

umbel. Scape 2-4 dm high and usually tinted pink towards the base. Main leaves 2-4 mm wide. Stamens $1\frac{1}{2}$ times as long as the perianth. Mid summer; chernozems. --swO, S-BC, US.

Despite a variety of earlier reports from Manitoba, all specimens under this name at CAN, DAO, MT, MTMG, QK and TRT have erect inflorescences, mucronate sepals and barely exerted stamens. All have been revised accordingly to A. stellatum.

3. A. stellatum Fraser -- Wild Onion -- Like the last and the outer layers of the bulb similarly membranous, but the umbel typically erect. Scape 3-6 dm high, not red-tinted. Leaves not over 2 mm wide. Stamens barely exerted. Mid summer, chernozems. --wO-S, US.

The many reports for further west in Alberta (CAN, DAO) and B.C. (DAO, QK, V) were based on specimens since revised to A. cernuum.

4. A. Geyeri Watson var. Geyeri -- Wild Onion -- Outer bulb coats reduced to a gray, fibrous reticulum. Mostly 2-5 dm high. Flowers pink, fading white. Perianth 6-8 mm high. Sepals linear-lanceolate, largest towards the base, long attenuate. Late spring. Foot-hill prairies. --S-BC, US -- F. tenerum (M.E. Jones) Boivin (A. rubrum Osterh.) -- Flowers all or mostly replaced by bulblets. Rare: Waterton. --swAlta-(sBC), US -- Var. textile (Nelson & Macbr.) Boivin (A. reticulatum Fraser; A. textile Nelson & Macbr.) -- Generally smaller, with smaller and whitish flowers. Mostly 1-2 dm high. Perianth 4-6 mm high. Sepals lanceolate, broadest towards the middle, obtuse to subacute at summit. Late spring and early summer. Common in prairies. --Man-Alta, US.

5. A. Schoenoprasum L. (var. sibiricum (L.) Hartm.) -- Chives (Ciboulette, Oignon sauvage) -- Flowers largest, 1 cm long or more. Tufted. Stem with 1-2 leaves. Flowers commonly pink. First half of summer. Infrequent on shores; also cultivated and sometimes persistent. --Mack-Aka, L-NF, NS, NB-O-(Man)-S-BC, US, Eur.

Most current floras will distinguish between var. Schoenoprasum, native in the Old World but an occasional escape in North America, and one or more native variants. We have found the supposed diagnostic criteria to be neither realistic nor constant and we have been unable to distinguish clearly the introduced plant on criteria other than its habitat.

6. A. tricoccum Aiton -- Wild Leek, Ramp -- (Ail des bois, Ail sauvage) -- Leaves flat and quite lar-

ge, disappearing before anthesis. Flowers in an umbel on a leafless scape. Perianth short, whitish. Early summer. Deciduous woods: Morden. --(NS), NB-sMan, US.

8. LILIUM L.

LILY

Basic type of the Family and of the Monopsids. A large flower with 6 petaloid tepals, 6 stamens and a 3-carpellate ovary. Stem leafy. Anthers attached dorsally, towards the middle. Bulb of fleshy scales. Fruit a 3-locular capsule.

1. L. philadelphicum L. var. philadelphicum -- Wood-Lily, Freckled Lily -- Flower very large and showy, of 6 red orange tepals, the latter unguiculate and coarsely punctate in deep purple. Leaves narrow, mostly verticillate. Flowers often 2 or 3, but more commonly only one. Typically the stem is 4-8 dm high; the leaves are 5-10 mm wide and about half of them are alternate, the others form two verticils, one median, one terminal; the tepals are about 7 cm long, the claws 1.5-2.0 cm long. First half of summer. Prairies and light woods. -- Q-Man, US -- Grades into the more common and mainly western var. andinum (Nutt.) Ker. (L. umbellatum Pursh) -- Prairie Lily -- Uppermost leaves forming a single verticil, the other leaves all or mostly alternate. Often a somewhat smaller plant. Typically 3-4 dm high; the leaves less than 5 mm wide; the tepals about 6 cm long, the claws 1.0-1.5 cm long. --O-CB -- F. immaculatum Raup -- Flowers yellow and spotless or the spots rather weak. -- (Man-S)-Alta.

Intermediates are frequent throughout the range of the species, more so in Ontario. In accordance with our general practice, we have placed all such intermediates with the locally prevalent type. On the basis of a sorting of some 200 sheets, the length of the claw would seem to be more clearly restricted geographically than most other characters.

9. FRITILLARIA L.

FRITILLARY

Anthers attached at the end, otherwise as in Lilium.

1. F. pudica (Pursh) Sprengel -- Mission-Bell, Yellow Bell -- A single, showy, yellow, drooping flower of 6 oblanceolate tepals. 1-2-(4) dm high. Leaves 2-5, variously arranged, typically the upper 2 are opposite and the lower 3 alternate. Early to mid summer. Foot-hill prairies. --Alta-BC, US.

10. ERYTHRONIUM L.

DOG-TOOTH-VIOLET

Leaves all basal, usually 2. Bulb solid. Otherwise like Fritillaria.

1. E. grandiflorum Pursh var. grandiflorum (var. pallidum St. John) -- Adam and Eve, Chamise-Lily -- Flowers 1-(3), large, showy, yellow, on a leafless scape. Leaves broadly lanceolate. Tepals lanceolate, recurved. Anthers purple or pale yellow. Mid spring to early summer. Montane to low alpine. --swAlta-BC, US.

In a more southern var. chrysandrum (Applegate) stat. n., ssp. chrysandrum Applegate, Contr. Dudley Herb. 1: 190. 1933, the anthers are golden yellow.

The related genus Lloydia occurs west of us and L. serotina (L.) Reich. var. serotina has been reported by Hultén 1943 and Hitchcock 1969 as occurring in Alberta, queried by Boivin 1967. We know of no justifying specimen; none could be located at S in 1968, or at WTU in 1969.

11. CALOCHORTUS Pursh

MARIPOSA-LILY

Resembles the last 3, but the sepals are strongly differentiated although petaloid.

1. C. apiculatus Baker -- Three-Spot-Lily -- With 3 -(4) leaves, of which one is basal and nearly reaches the flower level, the other 2 are many times shorter, opposite, and borne in the upper part of the stem. Flowers 1-(3), yellow, large and showy. Petals unguiculate with a purple spot at the summit of the claw and a suborbicular blade. Sepals smaller, sessile, lanceolate. Early summer. Mountain slopes. --Alta-BC, US.

12. CAMASSIA Lindley

BLUE CAMASS

As in Lilium, but the leaves all basal and the inflorescence a raceme.

1. C. Quamash (Pursh) Greene var. Quamash -- Quamash, Soap-Root-Plant (Camace, Quamash) -- A showy raceme of large blue flowers. Leaves linear. Tepals narrowly oblanceolate, 3-5 mm wide, with 3 nerves. Early summer. Foothill prairies, locally abundant. --swAlta-BC, US.

A more western var. maxima (Gould) Boivin has a more showy flower, the tepals being 5-10 mm wide and lined with 5-(9) nerves, although the sepals may rarely have only 3 nerves.

13. ASPARAGUS L.

ASPARAGUS

Flowers all or mostly solitary, axillary. True leaves very small and inconspicuous, functionally replaced by \pm filiform pseudo-leaves which represent reduced branches.

1. A. OFFICINALIS L. -- Asparagus (Asperge) -- Tall, feathery herb, over 1 m high, growing in loose

colonies. Pseudo-leaves filiform, borne in small fascicles. Flowers yellow. Fruit red, turning black. Early summer. Cultivated and long persisting or even spreading to ditches and river planes or bluffs. -- NS-(PEI)-NB-BC, US, Eur.

14. CLINTONIA Raf.

CLINTONIA

Similar to Lilium, but the leaves all basal and the fruit a berry.

- a. Flowers yellow, mostly 3-5 1. C. borealis
 aa. White and solitary 2. C. uniflora

1. C. borealis (Aiton) Raf. -- Poison-Berry, Blue-bead-Lily (Lis sauvage de la vallée) -- Herb with 2-3 large basal leaves and a few yellow flowers in an umbel. Inflorescence mostly of 3-5 flowers, sometimes with 1-2 additional flowers borne lower on the scape. Fruit blue. Late spring and early summer. Coniferous woods. --L-SPM, NS-seMan, US.

2. C. uniflora (Schultes) Kunth -- Queen's Cup -- Similar to the last, an herb with a single white flower on a scape shorter than the 2-3 large basal leaves. Herbage villous, especially the scape. Early summer. Coniferous woods: Waterton. --(Aka), swAlta-BC, US.

15. SMILACINA Desf.

FALSE SOLOMON'S SEAL

Fruit a berry in a terminal raceme or panicle. Stem leafy, simple.

- a. Inflorescence a panicle 1. S. racemosa
 aa. Inflorescence simpler, a terminal raceme.
 b. With 5-10 stem leaves 2. S. stellata
 bb. Stem leaves fewer, usually only 3
 3. S. trifolia

1. S. racemosa (L.) Desf. var. racemosa -- Job's Tears (Raisinette) -- A simple herb with many large distichous leaves and a terminal panicle of white flowers or red berries. Leaves + lanceolate, 3-4 times as long as wide and acuminate. Anthers 0.5-1.0 mm long, ovoid. Style 0.2-0.7 mm long, not elongating in fruit. Berry 5-7 mm across, solid red. Early summer. Woods, mainly Aspen groves; rare: Shoal Lake. -- (NF), NS-seMan -- Var. amplexicaulis (Nutt.) Watson (S. amplexicaulis Nutt.) -- Anthers smaller, 0.3-0.5 mm, globular. Style longer, 0.5-1.3 mm long, elongating to 1 mm or more in fruit. Berry smaller and paler, 4-5 mm across and punctate or pale red. -- (Aka), wAlta-BC, US -- Var. Jenkinsii Boivin (S. amplexicaulis Nutt. var. ovata Boivin) -- Leaves broader, suborbicular to narrowly elliptic, less than 3 times as long as wide; acutish to obtuse at tip. --swS-Alta.

2. S. stellata (L.) Desf. -- Wood-Lily -- Similar to the above, but the inflorescence simple and the larger fruit marked by 6 dark purple stripes. Late spring and early summer. Wet places and Aspen groves. --(seK)-Mack-Aka, sL-SPM, NS-BC, US, (Eur).

3. S. trifolia (L.) Desf. -- Tobacco-Berries, Scent-Bottle -- Leaves only (2)-3-(5) per plant. Flowers in a terminal spike. Fruit small, bright red. First half of summer. Frequent in bogs. --seK-Y, L-SPM, NS-BC, US, Eur.

16. MAIANTHEMUM Weber

WILD LILY-OF-THE-VALLEY

Floral parts in 2's. Otherwise similar to Smilacina.

1. M. canadense Desf. var. canadense -- Lily, Wild Lily-of-the-Valley (Muguet, Petit Muguet) -- A small stoloniferous herb with numerous solitary and sterile cordate leaves, and less numerous stems bearing 2 oblong leaves and a terminal raceme of small white flowers. Herbage glabrous. Early summer. Woods. --L-SPM, NS-seMan, US -- Var. interius Fern. -- Herbage pubescent. -- Mack, O-BC, US.

17. DISPORUM Sal.

Fruit a berry, etc., as in Smilacina, but the flower solitary and terminal, or in a small terminal cluster of 2-3 flowers.

a. Leaves glabrous above, acute to subacuminate ..

..... 1. D. trachycarpum

aa. Scabrous-puberulent above, abruptly acuminate-caudate

..... 2. D. Hookeri

1. D. trachycarpum (Watson) B. & A. -- Fairy-Bells -- A branched herb with 1-(2) flowers at the end of each branch. Leaves cordate, subsessile. Ovary and fruit densely papillose, the latter orange-red. Second half of spring. Woods. --nO-BC,US.

2. D. Hookeri (Torrey) Britton var. oreganum (Watson) Q. Jones (D. oreganum (Watson) B. & H.) -- Much like the first. Leaves narrower, mostly oblong. Ovary and fruit not papillose, but usually pubescent. Second half of spring. Mountain woods in Waterton. -- swAlta-BC, nwUS.

The anthers are clearly exerted in our var. oreganum and the style and ovary are commonly lanate. The stamens are included in the more southern typical phase and its style and ovary are usually glabrous.

18. STREPTOPUS Mx.

TWISTED STALK

Flowers axillary and solitary or in 2's, but the peduncle twisted around the leaf-base, so that the flower appears to be borne under the leaf. Fruit a berry.

- a. Flower rotate 1. S. streptopoides
 aa. Campanulate; plants larger.
 b. Leaves sessile to subamplexicaul.... 2. S. roseus
 bb. Deeply cordate at base 3. S. amplexifolius

1. S. streptopoides (Led.) Frye & Rigg var. bre-vipes (Baker) Fassett -- Flower small, greenish with a purple center and 6 large white stamens. Glabrous, (0.5) -1.0-(2.0) dm high. Leaves sessile to nearly clasping. Peduncle at first straight, becoming geniculate. All spring to mid summer. Dense and wettish coniferous woods; rare: Swan Hills. --Aka, wAlta-BC, (US).

In the typical phase from eastern Eurasia the leaves are ciliate. In ours they are eciliate and seemingly entire, but under an enlargement of about x 30 they will prove to be minutely crenulate-serrate because the marginal cells are strongly convex on their outer face.

2. S. roseus Mx. var. perspectus Fassett -- Car-ribou-Berry, Wild Cucumber (Rognons de coq) -- Herb once or twice dichotomously divided and bearing its flowers hidden under the leaves. Herbage ± hirsute. Leaves ciliate, more or less clasping. Peduncles recurved and somewhat hirsute. Late spring. Wet woods. --Aka, L-SPM, NS-Man, wAlta(Kakwa R.)-BC,US.

The peduncles are glabrous in the more southern var. roseus.

3. S. amplexifolius (L.) DC, var. americanus Schultes (var. denticulatus Fassett) -- Like the last, but glabrous and the peduncles strongly geniculate. Stem sometimes coarsely pilose on the 3 lowermost internodes. Leaves entire or more or less denticulate, deeply clasping. Flowers longer. Early summer. Wet woods. -G, swMack-(Y)-Aka, L-NF-(SPM), NS-O, S-BC, US, (Eur).

In southern British Columbia southward one may find a var. chalazatus Fassett in which the leaves are minutely papillose beneath.

It was pointed out by N.C. Fassett, Rhodora 37: 98-99. 1935 the correct name for the plants coarsely pilose on the lower stem internodes below the first branch is var. papillatus Ohwi. He adds: "such plants may occur anywhere throughout the range." When the large supply of Ontario sheets at TRT was sorted out according to leaf

ciliation, stem pubescence and their permutations, the four resulting piles were of about equal thickness. There was no evidence that either character could delimit a geographical variant. And obviously they were not linked.

Recently, Hitchcock 1969 has extended the range of chalazatus to Alberta and Alaska, but these extensions are discounted on the basis that var. chalazatus had been defined primarily in the sense of the earlier var. papillatus. There was no corresponding Alberta sheet at WTU and the two Alaska sheets (Kincaid on St. Paul and Hardy on Attu) have since been revised to var. americanus.

19. POLYGONATUM Miller SOLOMON'S SEAL

Tepals fused for over half their length. Plant otherwise typical of the family. Fruit a berry.

1. P. biflorum (Walter) Ell. (P. canaliculatum (Muhl.) Pursh; P. commutatum (R. & S.) Dietr.) -- Conquer-John -- Simple herb with broad leaves and drooping axillary umbels of (1)-2-(3) flowers. Flowers tubular, whitish, drooping, borne on a recurved peduncle. Early spring. Forests, usually Oak forests. --O-sMan-seS, US.

20. TRILLIUM L. WAKE-ROBIN

Leaves in a single verticil of 3. Flower single, typical of the family, but the sepals green. Fruit a berry.

1. T. cernuum L. (var. macranthum Eames & Wieg.) Sugarberry. -- Herb with a single verticil of 3 large squarrish-rhomboid leaves. Flower white, borne on a long deflexed peduncle and more or less hidden under the leaves. Berry red. Early summer. Low, deciduous woods. --NF-SPM, NS-ecS, US.

Because Trillium flowers keep on enlarging after opening, it has not been possible to delimit clearly and recognized readily a reputedly larger-flowered and more western var. macranthum.

Becomes quite rare in Saskatchewan where it is known from Hudson Bay Junction, Mistatim, Runnymede and Yorkton. A collection reported from further west at Fort Carlton (GH) has never been confirmed and is to be taken with a grain of salt. A Richardson collection labelled Mackenzie River (GH) is undoubtedly incorrect. Both of the latter were quoted by Macoun 1888 (as T. erectum var. declinatum) and in Rhodora 25: 191. 1923. Repeated by Porsild 1968.

T. ovatum Pursh was reported by Moss 1959 for Waterton, queried by Boivin 1967, repeated by Hitchcock

1969. The basis for the report is a photograph (ALTA) labelled "Found by R.H. Riggall, 1915, in Watertown Lakes Park, a small colony in deep shade. Pine-willow-aspens association, never found since." This has never been confirmed either as to locality or as to spontaneousness of occurrence. There is no voucher to check. The label data is not inconsistent with a deliberate introduction into the wild.

It has been our experience with unusual records that start as photographic evidence only, that they generally failed to progress from an initial preliminary report to a fully confirmed report. Hence our continued scepticism in all such cases.

A series of specimens at MTMG, including one of Trillium undulatum W., was collected in 1871 by I.S. Hargrave, supposedly at "St. Remi, Man." But the Saint Remi series does not to-day carry Hargrave's original labels and it comprises a number of other unlikely records; we speculate that they more likely came from "Saint-Rémi, Québec" and that the abbreviation "Man." may have been a speculative editorial accretion. Other series of Hargrave collections from Manitoba seem reliable as to location.

21. SMILAX L.

GREEN BRIER

Dioecious climber by means of stipules modified into tendrils.

1. S. herbacea L. var. herbacea -- Carrion-Flower, Jacob's Ladder (Raisin de Couleuvre) -- Climber, 1-2 dm high, with paired tendrils. Leaves broadly cordate, glabrous, glaucous below. Flowers green in a long-pedunculate umbel. Peduncle overtopping the subtending leaf. Fruit deep blue with a glaucous bloom. Early summer. Woods, rare: Tompkins, Hudson Bay Junction. --NB-sO, S, US -- Var. pulverulenta (Mx.) Gray -- Lower face of the leaves green and shiny, often pubescent. Peduncles elongate as above. Fruit black. Very local: Big Muddy Lake. --wO, scS, (US) -- Var. lasioneuron (Hooker) A. DC. (var. lasioneura sphalm.; S. lasioneuron Hooker; Nemexia lasioneuron (Hooker) Rydb.) -- Densely pubescent below on the nerves with thick whitish hairs. Peduncle not longer than the subtending leaf. Fruit glaucous. Frequent in deciduous woods. --O-S, US.

The common variety is var. lasioneuron. The latter is the original spelling of the name and apparently represents a name in apposition; many authors have altered it to the adjectival form lasioneura, but we are not convinced that such a correction was called for.

Of the other two varieties, var. herbacea is generally more eastern in its distribution, while var. pulverulenta is generally more southern. Both varieties are highly isolated in our area and both are associated with some of the more outstanding physiographic features (see Boivin 1953) within our area.

The two known localities for var. herbacea, Tompkins and Hudson Bay Junction, are located respectively on the Coteau Boisé and the Coteau de Prairie. Both Coteaus are not so well known as the Missouri Coteau, but both are similar and outstanding physiographic features of the Prairie. Undoubtedly all tree Coteaus have played an important role in the history of the development of the vegetation of our area in postglacial times.

The Boisé Coteau arises in northeastern Montana near Plentywood, follows the Big Muddy Valley along its western side, enters Canada at Big Muddy, veers West-North-West towards Swift Current, then West-South-West towards the Bullshead Butte in southeastern Alberta. From east to west this Coteau stands out gradually more and more above the surrounding country, being about 200 feet high at the eastern end and about 2000 at its western end. Various sectors of the Coteau Boisé have received individual names such as Little Woody, Wood Mountain, Pinto Butte, Cypress Hill and Bullshead Butte. The Coteau is well known for its fairly rich Rocky Mountain element and this aspect was the object of a special study by Breitung 1954. But it also harbors a more limited eastern flora that finds its western limit of range among the numerous wooded gullies that cut into this Coteau. Such as Ulmus americana and the typical variety of Smilax herbacea. These wooded gullies are like so many ecological islands in a otherwise steppic environment and their alignment along the Boisé Coteau offer a natural migration path for eastern forest types.

The Prairie Coteau runs almost parallel to the Red River and somewhat to the west of it. It is quite in evidence in the U.S.A. at least as far south as Big Stone Lake. Its various Canadian elements have received individual names such as the Pembina Hills, Agassiz Delta, Riding Mountain, Duck Mountain, Porcupine Mountain and Pasquia Hills. Its role as a south-north migration path is briefly mentioned under Milium effusum. If these two Coteaus have, as we postulate, played a role in the westward and northward expansion of var. herbacea, one can reasonably expect to find additional isolated colonies of this variety at other spots along either or both Coteaus.

Var. pulverulenta is known in our area only from two collections within the Big Muddy Valley, one at Big

Muddy itself, at the southern end of the Big Muddy Lake, the other due south of Bengough, at the western end of the lake. Both came from small wooded ravines, and it is not clear whether this variety belongs here phytogeographically with the Hudson Coulee or with the Coteau Boisé as in this sector the Coteau Boisé follows closely the coulée, merely adding an extra 200 feet or so to the height or the western (or southern) escarpment of the coulée. The Hudson Coulee is a glacial drainage system located between the crest of the Missouri Coteau and the foot of the Coteau Boisé. South of Big Muddy, the Hudson Coulee is a simple channel which coincides with the valley of the Big Muddy River. But north of Big Muddy it forms an interconnecting dendritic pattern of fossil valleys occupied by a series of saline lakes, each forming the heart of an inland drainage basin, with Lake Chaplin at the northermost end of the chain. The role of these fossil coulées in the history of our vegetegion is still to be worked out in detail, with Sarcobatus vermiculatus as perhaps the most obvious coincident botanical element.

Incidentally, each of the 3 known Canadian specimens of var. pulverulenta is sterile.

Also worth mentioning is an old collection from Dufferin (TRT) made during the boundary survey of 1873. One sheet is typical of var. lasioneuron, but a second sheet is in intermediate, the leaves being glabrous as in var. herbacea while the peduncles are short as in var. lasioneuron.

Order 66. IRIDALES

As in the Liliales, but the ovary inferior.

120. IRIDACEAE

IRIS FAMILY

Single family. Leaves equitant, that is folded longitudinally and the 2 upper halves fused face to face. Thus only the lower leaf face is visible, the leaves appear inserted edgewise on the stem and the rosette is conspicuously fan-like.

- a. Petaloid appendages 9; flowers very large.... 1. Iris
- aa. Appendages a normal 6; flowers much smaller...
..... 2. Sisyrinchium

1. IRIS L.

IRIS

Flower with 9 petaloid appendages: 3 sepals, 3 petals and 3 enlarged styles.

- a. Flowers yellow 3. I. pseudacorus
- aa. Blue.
 - b. Leaves over 1 cm wide 1. I. versicolor
 - bb. Narrower 2. I. missouriensis

1. I. versicolor L. var. versicolor -- Flag, Boats (Clajoux, Glafeul de marais) -- Herb with very large blue flowers and leaves inserted edgewise. Up to 1 m high. Leaves ensiform, 1-2 cm wide, up to 3-7 dm long. Tepals up to 5-6 cm long. Early summer. Very wet places. -- seK, L-SPM, NS-seMan, US.

The typical phase found in our area is segregated by its ovary 1-2 cm long, elongating to 3-6 cm in fruit and a yellowish and finely papillose patch on the sepals. Grades into the more southern var. Shrevei (Small) Boivin with a longer ovary, 1.8-3.5 cm long, elongating to 5-10 cm in fruit and the yellow patch pubescent and more vividly contrasted.

2. I. missouriensis Nutt. -- Like the last but the leaves stiffer and narrower, their bases deep brown, marcescent and very crowded. 3-6 dm high. Leaves 1-4 dm high, 3-8 mm wide. Inflorescence bracts pale, often whitish. Early summer. Marshes and shores, rare: Carway, Whiskey Gap. -- sAlta-wBC, US.

Seems native with us, but more likely to be an introduction in B.C.

3. I. PSEUDACORUS L. -- Water-Flag, Yellow Flag (Fleur de Lis, Flambe d'eau) -- Flowers yellow and very showy. Leaves 1-3 cm wide. Fruits drooping, much tapered at both ends. Early summer. Cultivated and possibly escaped to ditches in Saint-François-Xavier. --(NF), NS-PEI, Q-Man, BC, (US), Eur.

The only Manitoba locality could not be confirmed as to occurrence.

2. SISYRINCHIUM L. BLUE-EYED GRASS

Like a diminutive version of Iris, but the corolla-like parts only 6 in number, the styles not being petaloid.

1. S. Bermudiana L. Var. Bermudiana (S. angustifolium AA.; S. campestre Bickn.; S. montanum Greene; S. mucronatum AA.; S. sarmentosum Suksd.; S. septentrionale Bickn.) -- Grass-Flower, Blue-eyed Grass (Bermudienne) -- A Grass-like herb with blue flowers. Tufted. Stems flattened and produced into a pair of opposite wings. Tepals blue, about 1 cm long, mucronate. Capsule light green to light brown or straw-coloured. Early summer. Wet meadows. -- G, Mack-Y-(Aka), L-SPM, NS-BC, US-- F. albiflorum (J.W. Moore) Boivin -- Flowers white. -- (Man)-S-Alta, US.

Grades eastward into a var. crebrum (Fern.) Boivin, a more intensely coloured plant that tends to darken in

drying; bracts and spathes commonly purplish, at least at margin; capsule green, often blackening in drying.

The rejection of Sisyrinchium Bermudiana by Bicknell in 1896 does not seem to conform to our current Rules of Botanical Nomenclature. The linnean type, an excellent Kalm collection (LINN), is inscribed "Bermudiana 1 K", and clearly represents the typical phase of the linnean concept of the species. It is a specimen of what current manuals call S. montanum.

There is also much confusion between S. Bermudiana (or S. montanum) and S. angustifolium Miller; the latter a larger plant frequent around the Gulf of St. Lawrence. Some authors will apply S. Bermudiana to S. angustifolium or even to either species indifferently. Other authors will use S. angustifolium to designate S. Bermudiana. Our usage is coherent with Fernald 1950.

Order 67. AGAVALES

Root (or stem) woody. Tepals partly fused. Leaves all basal, long and very stiff, bayonet-like. Otherwise much as in the Liliales.

121. AGAVACEAE

AGAVE FAMILY

Tepals fleshy and petaloid.

1. YUCCA L.

SPANISH BAYONET

Tepals free. Coarse herbs of a rather distinctive habit.

1. Y. glauca Nutt. var. glauca -- Yucca, Soapweed -- Numerous Bayonet-like leaves in a basal hemispheric tuft, overtopped by the tall stem bearing bract-like leaves and a raceme of large yellow flowers. Stem about 1 m high. Leaves about 4 dm long, very stiff and very sharp-pointed. Early summer. Eroded steppes, local: Lost River Canyon in Onefour. -- scAlta, US.

In a more southern var. mollis Eng. the leaves are not so stiff, but more pliable, less involute and often a bit broader.

Order 68. HAEMODORALES

Resembles Liliales and Iridales, but the ovary is \pm inferior and the perianth is partly fused into a single tube which is more or less pubescent on the outside.

122. HYPOXIDACEAE

STARGRASS FAMILY

Leaves all basal, pubescent.

1. HYPOXIS L.

STARGRASS

Anthers attached dorsally.

1. H. hirsuta (L.) Cov. -- Stargrass -- Small grass-like herb, pubescent, the yellow flowers pubescent on the outside. Perennial from a corm. Flowers few, umbellate or racemose, overtopped by the leaves. Early summer. Low meadows. -- swO-S, US.